

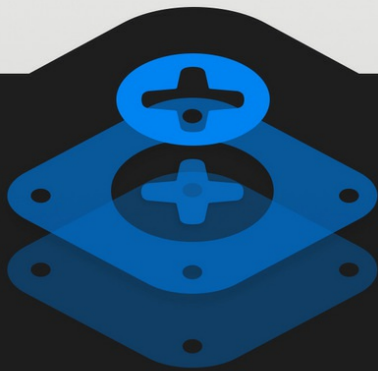


LG Watch Urbane Teardown

LG Watch Urbane teardown on May 5, 2015.

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LG URBANE



TEARDOWN

INTRODUCTION

It's already the 5th of May, and we've been tearing down watches like clockwork. Guess what we found when we cracked open our piñata: LG's latest smartwatch, the LG Watch Urbane. Will it compare to last year's [LG G Watch](#) or will we make some alarming discoveries?

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TOOLS:

- [Curved Razor Blade](#) (1)
 - [iFixit Opening Picks set of 6](#) (1)
 - [Tweezers](#) (1)
 - [iOpener](#) (1)
 - [Phillips #00 Screwdriver](#) (1)
 - [iFixit Opening Tools](#) (1)
 - [Spudger](#) (1)
 - [Bergeon 6111 Spring Bar Tool](#) (1)
 - [Bergeon 6767-F Spring Bar Tool](#) (1)
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Step 1 — LG Watch Urbane Teardown



- [Urbane legend](#) has it that this is the first smartwatch to closely resemble a traditional watch, rather than a wearable smartphone. Let's see what else this timepiece has to offer:
 - 1.3-inch 320 x 320 (~245 ppi) P-OLED display
 - 410 mAh battery
 - Snapdragon 400 processor with 1.2 GHz Quad-Core Cortex A7
 - 512 MB RAM and 4 GB storage
 - 9-axis combination (Gyro + Accelerometer + Compass)
 - Bluetooth 4.1 Low Energy

Step 2



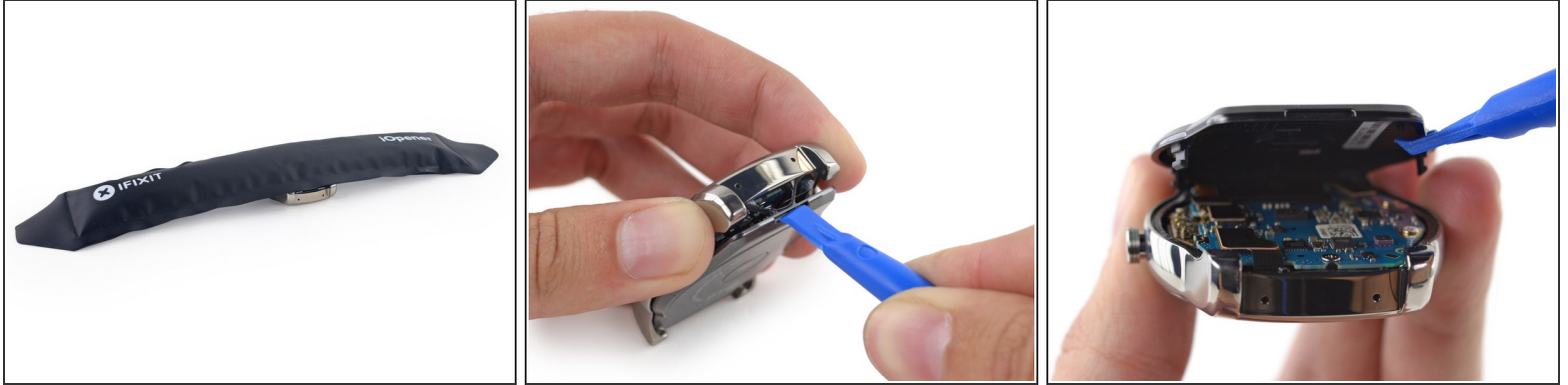
- Barring the dark watch face, this device could certainly be mistaken for a mechanical watch, until you flip it over...
- The rear of the watch features a heart rate sensor, charging dock contacts, and the model number (LG-W150).
- While the Urbane eliminated a handful of face options included in the LG G Watch, this timepiece introduces plenty of [faces](#) to choose from.
- ① The Urbane's 245 ppi display looks a lot better in person than under our camera—there seems to be a [moiré effect](#) that makes the pixels stand out.
- However, it's still not quite as sharp at super-close distances as the Apple Watch, with its 290 ppi (for the 38 mm, 302 for the 42 mm) screen.

Step 3



- The 22 mm standard leather watch band can be swapped out for [other bands](#) of various colors and materials.
- Our handy pointy [angled tweezers](#) are once again invaluable spring bar removers.
- Removing the band exposes a couple of ports, likely for the microphone—or *microphones*?

Step 4



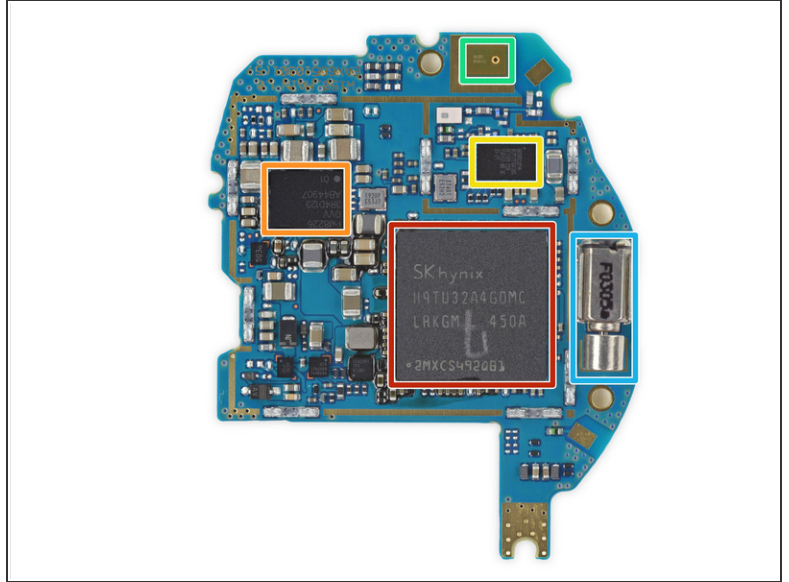
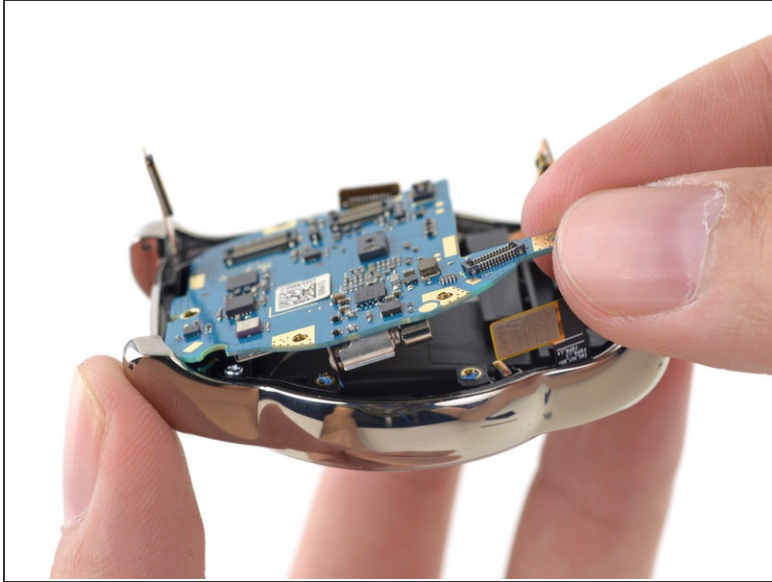
- The last time we tore down an [LG smartwatch](#), we were pleased to find screws securing an o-ring sealed rear door. Today we're heating our iOpener and feeling a little sad.
- However, thanks to a handy pry notch, things aren't *too* bad. But you will need to replace the adhesive before re-sealing the watch, to maintain that IP67 water resistant rating.
- ① [IP67](#) is a water and dust resistance rating that guarantees the device to be dust-tight, and able to survive submersion in 1 meter of water for 30 minutes.

Step 5



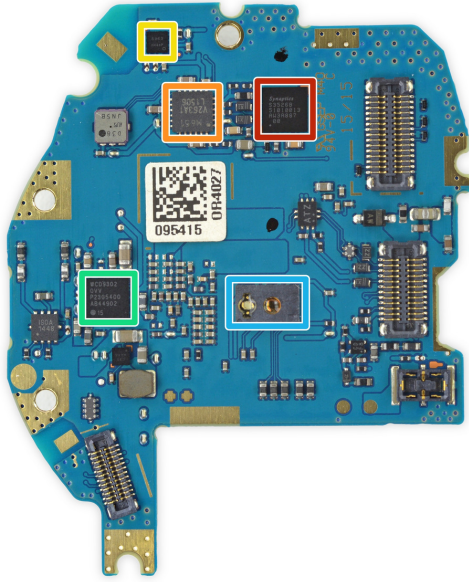
- Apart from the glue, the rear case comes away nice and clean—no cables, no booby traps. We like it.
- Power from the charger feeds through the rear case onto a tidy row of spring contacts beside the motherboard.
- Speaking of the motherboard, it's time to start digging out the Urbane's silicon. Starting with the battery, we flick away a few cable connectors and twist out the tiny watch-sized screws.
- ① Happily, these are totally ordinary (albeit tiny) Phillips screws—none of that [sketchy tri-wing business](#) you find in so many flashy smartwatches these days.

Step 6



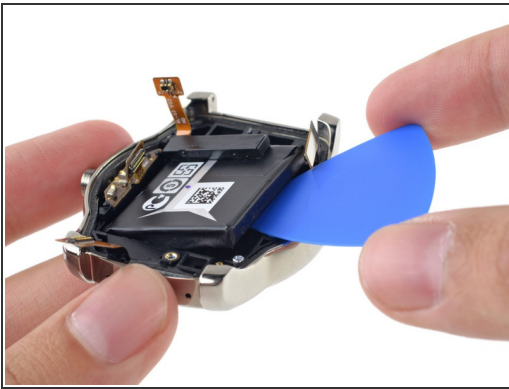
- We peel the motherboard out of the chassis to get a better look at this wearable's hardware:
 - SK Hynix [H9TU32A4GDMC](#) 512 MB mobile DDR2. The Qualcomm Snapdragon 400 SoC is hidden beneath this DRAM device.
 - Qualcomm PM8226 PMIC
 - Broadcom [BCM4343](#) integrated communications module
 - Single microphone—we're not sure why there were two ports; maybe just symmetry?
 - Vibrator motor—soldered in place on the motherboard

Step 7



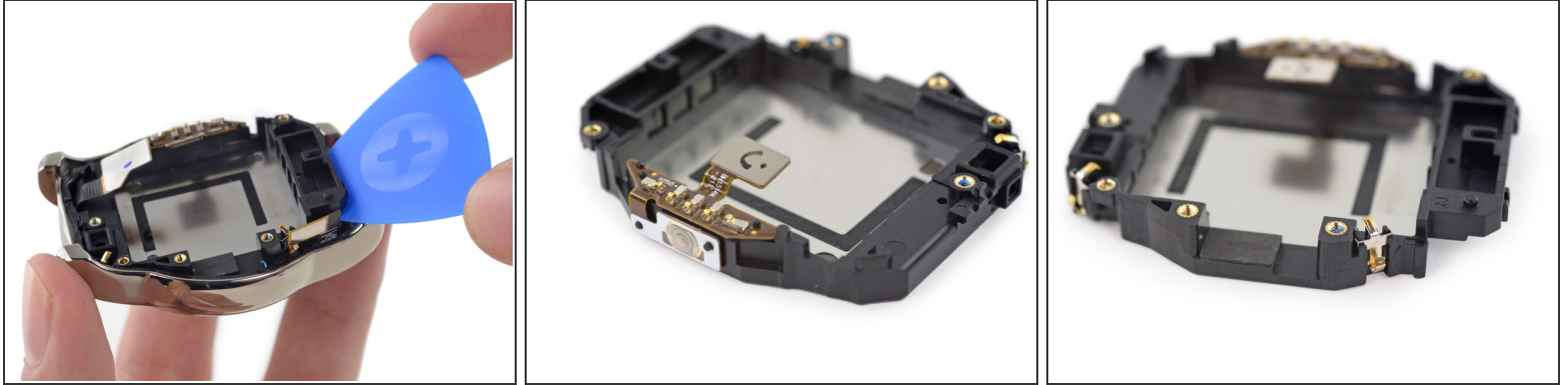
- And on the flipside:
- Synaptics [S3526B](#) touch controller
- Invensense [M651](#) 6-axis accelerometer and gyro
- Asahi Kasei [AK8963](#) 3-axis compass IC
- Qualcomm WCD9302 audio codec
- PPG sensor

Step 8



- With a quick twist of our opening pick, we remove the battery faster than a mariachi player running through his scales.
- The Urbane rocks a 410 mAh battery—just like its primo, the LG G Watch R.
- ❗ The [Moto 360](#) and [Samsung Gear Live](#) pack 300 mAh batteries, while the [Apple Watch](#) gets by on a mere 205 mAh cell.

Step 9



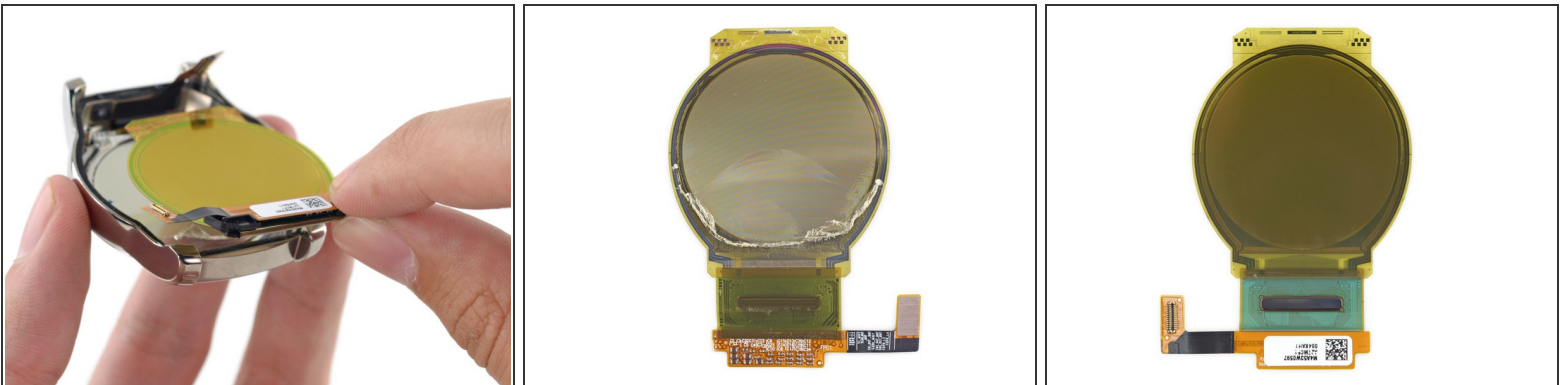
- Two screws and some mild adhesive are all that stand between us and picking out the plastic midframe.
 - ⓘ As devices shrink, manufacturers are turning to adhesive instead of screws or clips.
 - On the whole, this has been bad news for repairs—but in this case, LG seems to have found the secret recipe that balances construction strength with pry-ability.
- Picking out the watch's midframe reveals a single cable responsible for the crown button and charging cradle ports, and a pair of spring contacts that connect the motherboard to the watch body, perhaps to use the body as an antenna.

Step 10



- Our iOpener [tags in](#) to help dispatch the P-OLED display.
- ⓘ This incredibly thin display appears to be made up of several layers, that need to be peeled up off the back of the glass in order to remove the glass.
- As we peel up the display a strange, [stretchy](#) membrane sticks to the back of the digitizer.
- ⓘ This membrane is definitely serving as an adhesive between the display and the digitizer, but may also serve some higher purpose as a [thin film](#).

Step 11



- Peeling up the display
- Now that it's free of the case, we can get a closer look at the Urbane's 245ppi P-OLED screen.
- ⓘ If you think this display looks familiar, we're right with you. LG says they built the Urbane around the display used in the LG G Watch R.

Step 12



- The next layer off the screen sandwich is the digitizer. Also held in with sticky adhesive on both sides, it bears the LG Display co., Ltd marking.
- LG produces their own displays for their gadgets—something [not every manufacturer](#) is able to do.

Step 13



- We put our curved blade to work, and pop out the display glass.
 - The glass floats away intact, in all its perfect circularness, and the last layer of the display—which looks like a polarizing film—peels off, leaving behind some gooey optically clear adhesive (OCA) residue.
 - Unfortunately, it seems like the procedure we just endured is the only way to replace a cracked screen—the display and digitizer are adhered to the back of the glass *after* it is installed in the watch body.
- ❗ That means to replace a cracked glass you'll have to remove all of the pieces of the display, install a new glass front, and then adhere a new OLED display to the back of the glass with OCA.

Step 14



REPAIRABILITY SCORE:



- LG Watch Urbane Repairability Score: **7** out of 10 (10 is easiest to repair)
 - Once you're inside, the motherboard is very easy to remove—three Phillips screws and a few connectors.
 - With the motherboard out, the battery is very easy to replace; only mild adhesive holds it in.
 - Features a standard 22 mm band secured with spring bars—replacement and style swaps are easy.
 - Glued back requires heat and prying to open, and replacement adhesive to properly re-seal.
 - Because the display is adhered to the back of the front glass, which is removed from the front, screen replacement is very difficult and will require re-adhering the display layers.

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